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Effect of Online Learning in Psychology course on Undergraduate students' Engagement in Learning

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Abstract: The paper has analyzed the effect of online learning and traditional mode of learning on students' engagement in learning. A sample of 50 students studying psychology in their B.A course was selected randomly from one college in Chandigarh. An online learning course in selected topics of psychology was developed. The experimental group of the study was exposed through online learning mode for 15 days. Likewise, control group was taught the same content by traditional learning for 15 days as well. Both the groups were controlled on same instructional design model such as ADDIE (analysis, design, development, implementation and evaluation), same number of participants, same content was employed for teaching and they were both matched on pre-test of engagement in learning. The students' post-test scores on engagement in learning was analyzed using t-test to determine if there were significant differences between the two groups. Results indicated significant differences between online learning and traditional learning on students' engagement in learning as students taught by online learning were more engaged in learning than students who were taught by traditional learning. It indicates that learning through online does enhance students' engagement in learning.

1. INTRODUCTION

As access to the internet and World Wide Web has continued to grow, academicians have started exploring the possibilities of integrating online learning in educational institutions. As a consequence, universities and colleges also started using internet and various other software which work with the help

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of internet in providing education even to regular students. Online learning provides flexibility, autonomy, anytime-anywhere learning style and also online learning has become so proficient and famous because of the flexibility it provides to the students as they can access content and ask anything to their teachers anytime and from any place. Moreover, it provides a variety of learning like multimedia, video/audio call, threaded discussions, webinar, webquests and lots of other learning strategies which are used in online learning environment. It attracts students and engage them with the learning content.

2. CONCEPT OF ONLINE LEARNING

The term online learning has been originated from the field of distance education where computers and satellites were used to deliver courses. Later internet became populated in delivering education to distance education students and now to regular courses as well. Online learning is a broad term which constitutes web-based learning, computer based learning and virtual learning and all these terms are applications of online learning. It is a learning that happens either completely or partially on the internet. It does not involve learning through radio, video conference, educational software which run without internet as they all do not possess significant internet based content [15]. It is a method of instructions in which learning activity is designed by using a blend of technology and various tools of internet which gives them everything required in a classroom like instruction, communication and assessment [14].

Online Learning is delivered in two forms such as: a) Asynchronous online learning: It is a form of learning in which teaching and learning do not happen at the same time but happens according to the convenience of the learners because of its student-centered nature. Asynchronous online learning is a cognitive participation of learners which increases reflection and ability to process information. Tools used in asynchronous online learning are emails, discussion groups, audio and video recording and e-course. b) Synchronous online learning: Communication which happens between student and teacher during an interaction which occurs online at the same time [8]. Synchronous online learning is a personal participation of learners which increases arousal and motivation. Tools used in synchronous OL are video conferencing, chat, whiteboard, virtual classroom.

Asynchronous gives freedom to learners so that they can learn anytime they want. On the other hand, synchronous provides an element of teacher presence in which live support and guidance are given to learners at the same time when they both are present online. Therefore, in an amalgamation of asynchronous & synchronous online learning, the drawbacks like absence of

teacher presence in asynchronous and absence of freedom in synchronous is removed by combining good traits of both asynchronous and synchronous.

3. ENGAGEMENT IN LEARNING

Engagement is the most largely explored topic in the current literature of higher education [13]. Engagement has been described as a participation of students in activities of their class, associated with the subject matter which are conducted by their teacher [3]. It was also stated by Kuh [6] that student engagement is the time and effort spend by students to their activities which are related with desired outcomes of school and what schools and institutions do to prompt students to participate in these activities. Students are generally engaged if they are engrossed in their work whether it is their learning in classroom activities or other than classroom. Engaged students show passion and enthusiasm while learning and achieving goals of learning. For the present research, engagement in learning is defined as a "meta-construct that includes behavioral, emotional and cognitive engagement" [4].

Carini, Kuh and Klein [2] have considered student engagement to be the better forecaster of learning and personal development. They interpreted that student engagement is positively correlated to desirable learning outcomes such as critical thinking and grades. Engaged students demonstrate high academic achievement [12]. It has also been observed recently that students are more engaged when they learn through web-enabled learning systems. It was supported by Northey, Bucic, Chylinski and Govind [11] that learners who learned through asynchronous learning environment were more engaged with their learning relatively learners who used traditional learning environment. Thus, engagement in learning is associated positively with academic grades and also learner has performed well in web-based learning which indeed warrant researchers to further enquire into engagement and how computer/ online learning environment influences it.

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4. OBJECTIVE OF THE STUDY

The study was conducted to investigate the effect of online learning in psychology course on students' engagement in learning.

5. LITERATURE REVIEW

Bulger, Mayer, Almeroth and Blau [1] studied learner engagement in a classrooms equipped with computer. A sample of 139 students participated in the study at

the university of California. The quasi-experimental methodology was used in which 32 participants in two classes were given no-simulation treatment and 107 participants in five classes were given the simulation treatment. Findings indicated that CBAS (Classroom Behavior Analysis System) recorded high levels of student engagement in the simulation condition indicated by low levels of off-task internet action. Besides, CBAS measured low levels of engagement with the class activity in the no-simulation condition as reflected by high levels of off-task internet actions and low levels of on-task actions.

Neumann and Hood [10] examined the effect of using wikipedia on student engagement and learning of report writing skills in a university statistics course. It was found that the wiki approach yielded higher engagement than the individual approach.

Junco, Heibergert and Loken [5] determined the effect of twitter on college student engagement and grades. The results proved that experimental group had a significantly greater increase in student engagement as well as higher semester grades than the control group.

Lerma [7] indicated higher than average levels of engagement and student satisfaction in the community college where online course was taken.

Murphy and Stewart [9] scrutinized the impact of online or F2F lecture choice on student achievement and engagement in a science course. The study revealed that a type of lecture did not significantly impact student achievement or engagement. It also suggested that students who opted for recorded lectures were lower performing and less engaged before the option to watch recorded lectures was introduced, but there was evidence of a reduction in achievement and engagement differences after the option was introduced.

The recce of the studies which were done related to student engagement depicts association between instructional method and engagement of students [1], although engagement of students was assessed by real time observation method. Likewise, the studies which used self- reported measurement of students' engagement also found significant increase in student engagement [10], [5]. As the previous studies between online and traditional learning revealed significant differences between these two types on students' engagement. Nonetheless, it warrants to do its further examination in a fresh manner which can give another evidence on online learning and its effect on engagement in learning.

6. HYPOTHESIS

There will be no significant difference in the post-test scores on engagement in learning between students taught through online learning or traditional learning.

7. METHODS AND PROCEDURES

7.1 Research Design

An experimental method was employed to study the problem (pre-test and post-test control group design) where participants were randomly assigned to experimental and control group.

7.2 Sample

A sample of 50 students, studying Psychology in first year BA degree course, was raised randomly from one college, D.A.V College, Chandigarh which is affiliated to Panjab University.

7.3 Instruments

The standardized tool of engagement in learning developed by Schreiner and Louis [13] was employed for the present study. An online learning course in selected topics of psychology was developed by the investigators.

7.4 Procedure

The study consisted of two groups, one experimental group and another control group. 50 students were randomly distributed to both the groups. The experimental group, consisting of 25 students, was exposed through online learning mode for 15 days whereas control group, consisting of 25 students, was taught by traditional way of learning. The dependent variable was computed on the basis of scores achieved by students on pre-test and post-test of engagement in learning.

7.5 Discussion of Results

The descriptive statistics was employed to study the nature of distribution of data and the results showed that mean pre-test score of experimental and control was close to each other and the values of skewness and kurtosis lied within the acceptable limits of normality distribution. The normal distribution of the scores is further corroborated by applying normality test (ShapiroWilk test). The results indicated that the p-value (.947) is greater than the 0.5 alpha level as well as 0.1 alpha level for experimental group while p-value (.697) is again greater than the 0.5 as well as 0.1 alpha level for control group which demonstrated that the data came from a normally distributed population. In other words, data is normal for both experimental and control group as well.

For testing the variances of the total sample, Levene's test was applied and it has showed that scores had equality of variances for both the groups on pre-

test scores. The experimental and control group were matched on pre-test of engagement in learning scores and t-test was conducted for matching the group. The result of the t-test indicated no significant differences between the two groups.

In addition, t-ratio was computed to study the significance of differences between means of two groups. The results indicated that group means differ significantly because p value is .007 which is less than 0.05 as well as 0.01 alpha level of significance. It indicates that both the groups such as experimental and control group were different on post-test scores at .05 and .01 alpha level of significance. In other words, online learning and traditional learning groups were different on post-test scores; $t\ (48) = 2.808$, $p = .007$. Therefore, null hypothesis which states that there will be no significant difference in the mean post-test scores on engagement in learning between students taught through online learning or traditional learning is rejected as online learning and traditional learning groups achieved different on engagement in learning post-test means. After collating means of both the groups, it was found that students who were taught by online learning were more engaged with their learning comparatively students who were taught by traditional learning mode.

8. CONCLUSION

In scrutinizing the effect of online learning on undergraduates students' engagement in learning, this study found that engagement of students in experimental group was improved as compared to control group on post-test scores of engagement in learning. Both the groups were controlled on the basis of ADDIE instructional design model which was used for designing instructions for online learning and traditional learning as well, pre-test of engagement in learning and the teacher who taught them. Findings of the study has indicated that students of experimental group who were taught by online learning mode scored significantly better on engagement in learning then those students who were taught by traditional mode of instructions. It suggests that online learning can significantly improve engagement of undergraduate students in learning relatively traditional mode of learning. The result supports the findings of [1], [10], [5] and [7].

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